

DECARBONISATION ROADMAP

OUR VISION FOR A LOW CARBON FUTURE

CLIMATE TRANSITION

Our vision for a low carbon future is a mine with sources of onsite and imported renewable energy, reductions in absolute energy consumption through efficient operational strategy and new technologies, staged electrification of our mobile fleet and partnerships with our suppliers to select low carbon options and increase recycling in our supply chain.

In the short-term, we are focused on the identification and delivery of projects that will effectively reduce our operational Scope 1 and 2 GHG emissions. However, through our climate transition strategy we also recognise the need to collaborate with our supply chain to reduce Scope 3 GHG emissions; and more broadly, consider the social and environmental inter-relationships associated with our decarbonisation journey.

Our programme for operational emissions reductions is built around:

Renewable electricity

Sourcing clean power for our operation through the procurement or development of renewable energy supply

Low carbon power sources

Switching to lower carbon fuels, together with electrification as an alternative to diesel use applications

Energy efficiency

Continuous work to optimise and improve the energy efficiency of all our processes

In 2022, we executed various carbon abatement projects and most notably our 36MW_{DC} (30MW_{AC}) solar plant and battery storage system. In 2022, we studied opportunities to reduce the operational emissions of Sukari over the life of mine, including sourcing clean and lower carbon power through connection to the national grid and further expansion of our onsite renewable energy production.

We have set an interim climate target of 30%, to reduce our direct operational Scope 1 and 2 GHG emissions by 2030, compared to a 2021 base-year. This would put us on a Paris-aligned trajectory to limit global warming to 'well below' 2°C by 2050.



CARBON ABATEMENT PROGRESS IN 2022

In Q4 2022, Sukari successfully commissioned the 36MW_{DC} (30MW_{AC}) solar plant and 7MW battery energy storage system, providing a secondary energy source to Sukari and increasing the renewable make-up of site power generation to 20%. This solar plant will save up to 70,000 litres of diesel per day; equivalent to an annual reduction of 60,000 tCO₂e.

At Sukari, we also executed various efficiency initiatives leading to further carbon abatement, including:

- Roll-out of the remaining 30 high-production trays to the haul fleet, resulting in an 8% reduction in fuel consumption per tonne of material moved
- Optimisation of the fine grind process within the comminution circuit
- Replacement of older underground trucks and loaders with more efficient units
- LED light bulb conversion

Collectively these initiatives decreased our Scope 1 GHG emissions in excess of 43,000 tCO₂e in 2022; at an equivalent capital carbon abatement expenditure of US\$12.56 million.

SOLAR PLANT SAVINGS

Annual reduction of

60,000 tCO₂e



DECARBONISATION ROADMAP CONTINUED

OUR 2030 TARGET

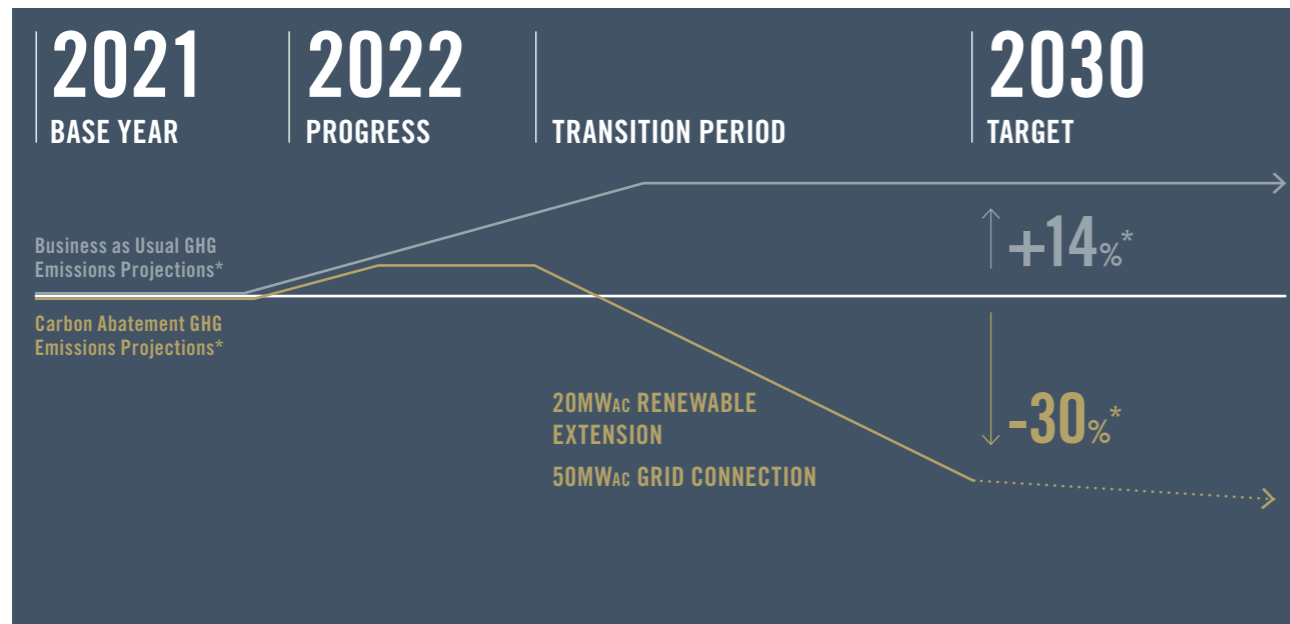
In the absence of carbon abatement, Scope 1 and 2 emissions in 2030 at Sukari are projected to be 550,819 tCO₂e based on a development scenario consistent with our current business model. This business-as-usual scenario is equivalent to a 14% increase in absolute emissions compared to the 2021 base-year⁽¹⁾, primarily associated with higher demand on stationary power fuel consumption.

Execution of our carbon abatement roadmap is projected to reduce our Scope 1 and 2 emissions by 30% compared to our 2021 base-year; a resultant emissions value of 335,595 tCO₂e in 2030.

OUR 2030 CARBON ABATEMENT ROADMAP

To achieve our interim target of a 30% reduction in operational Scope 1 and 2 GHG emissions by 2030, we have developed a carbon abatement roadmap for Sukari. The carbon abatement projects that underpin our interim target are a 20MW_{AC} extension to our existing solar plant, a 50MW_{AC} connection to the national electricity grid, including increased levels of renewable energy sourced through the national electricity grid compared to our 2021 base-year.

We have identified a number of other opportunities with the potential to reduce our GHG emissions, namely electrification of our mobile fleet and energy efficiency, but these are currently excluded from our interim target pending further technical and economic studies.



GHG projections are relative to 2021 base-year i.e. operation of thermal power plant.

Projections reflect growth consistent with current business model.

Projections include Scope 1 and 2 emissions only; Scope 3 emissions are excluded.

* 2030 emission estimates for the Business as Usual and Carbon Abatement scenarios are relative to the 2021 base-year.

UNDERPINNING OUR 2030 TARGET

20MW_{AC} RENEWABLE EXTENSION

In 2022, Sukari successfully commissioned the 36MW_{DC} (30MW_{AC}) solar plant. An additional 20MW_{AC} extension to the existing solar infrastructure (totaling 50MW_{AC}) would fully meet the baseload power demand of the mine, with minimal requirement for thermal power generation during peak daylight hours. We aim to achieve this through staged 5MW_{AC} installations over four years commencing in 2024 at a capital cost of US\$25 million to US\$35 million.

50MW_{AC} GRID CONNECTION

A 50MW_{AC} grid connection at Sukari, in combination with our existing 36MW_{AC} solar plant, would fully meet the electricity needs of the mine without the requirement for onsite thermal power generation using diesel fuel. Following recent upgrades to Egypt's distribution infrastructure, a high voltage grid connection is located within 25km of Sukari. We are targeting grid connection in 2024 at a capital cost of US\$20 million to US\$30 million.

Grid electricity is partly generated from renewable sources (12% in 2021), with the remainder from non-renewable fuels, predominantly natural gas. The Egyptian government is planning to increase renewable energy generation to 40% by 2030 as published in their Nationally Determined Contributions. Our 2030 interim target accounts for an increase in renewable energy sourced through the grid, from 12% in 2021 to 38%.

Importantly, a continuous supply of renewable energy would enable Sukari to introduce a range of lower-carbon technologies, including the electrification of our mobile fleet, at a scale not currently feasible while reliant on onsite thermal power generation.

DECARBONISING OUR SUPPLY CHAIN

We are committed to mitigate the impact of our supply chain emissions, while recognising that the nature of Scope 3 emissions are largely outside our direct control.

The majority of our Scope 3 emissions, 98%, are upstream to our operation and relate to purchased goods, services and capital expenditure.

Our actions are focused on collaboration with our suppliers to first understand the sources of our Scope 3 emissions, then identify how we can most effectively reduce them. Preliminary studies of our supply chain indicate that approximately 20 of our suppliers generate up to 75% of our Scope 3 emissions. We are collaborating with these key suppliers to verify the carbon footprint of their value chain and opportunities for abatement.

Scope 3 emissions are not yet included in our interim target for carbon abatement. We aim to set targets for a reduction in our Scope 3 emissions by the end of 2024.

ADDITIONAL ABATEMENT OPPORTUNITIES

Additional abatement opportunities associated with fleet electrification and energy efficiency are not currently included within our interim 2030 target pending further investigation.

ELECTRIFYING OUR MINING FLEET

Operation of our mobile mining fleet represents approximately 50% of our GHG emissions at Sukari. Opportunities to switch from diesel use to power sourced from lower carbon fuels include:

- Hybrid diesel-electric shovels to replace existing open pit face shovels
- New generation hybrid diesel-electric loaders to replace existing underground fleet
- In-pit crushing and conveyors to replace open pit haul trucks for delivery of ore to the mill
- Electrification of the underground load and haul fleet

For each of these opportunities, the technology is commercially available and there is a positive return on investment within the operational life of Sukari.

ENERGY EFFICIENCY

At Sukari, 71% of stationary energy consumption is associated with comminution: the grinding and crushing of rock. Through various optimisation initiatives, we believe there is opportunity to fragment particles using less energy than has conventionally been the case. Other opportunities to improve the energy and fuel efficiency of our processes include:

- Development of a fixed plant power management and monitoring system to optimise energy generation and distribution
- Conversion to variable frequency drives for pumps and intermittent rather than continuous operation
- Utilisation of smaller generators in combination with existing thermal power plant
- Open pit fleet management and haul road optimisation.

(1) The year 2021 has been established as CEY's base-year with reliable and verifiable GHG emissions data. Our base-year was amended in 2022 to account for the outsourcing of waste mining services at Sukari which met thresholds for significance as defined under our GHG Base Year Policy.